

**Notice of Allowability**

Application No.

10/797,761

Examiner

James D. Stein

Applicant(s)

BUELOW ET AL.

Art Unit

2874

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to after-final arguments filed on 04/06/06.
2. ☒ The allowed claim(s) is/are 1-7 and 18-31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
James D. Stein  
Patent Examiner, AU 2874

**DETAILED ACTION**

This Office Action is responsive to the arguments filed on 04/06/06, which have been considered and entered.

***Allowable Subject Matter***

Claims 1-7 and 18-31 are allowed.

Applicant's arguments with respect to claims 1 and 2 are persuasive. None of the cited prior art discloses or suggests the light-pipe with uniform side-light emission previously claimed, wherein light scattering material is distributed with a non-zero density gradient along a longitudinal axis of the light pipe chosen to achieve uniform side light emission; the core lacking any signification variation in refractive index along the longitudinal axis as measured without regard to the presence of the light-scattering material. As noted in applicant's remarks, Lieberman discloses an optical waveguide sheet employing *both* a non-zero density gradient and a refractive index density gradient along the longitudinal axis of the device. Liebermann relies on both of these features to induce uniform side-light emission. Therefore, one of ordinary skill in the art would not have found it obvious to modify Naum to include scattering particles with a non-zero density gradient along the core of the light pipe *without also including* the non-zero refractive index density gradient in the core.

Applicant has discovered an arrangement for a light pipe with uniform side-light emission including a non-zero density gradient of light scattering particles distributed along a longitudinal axis of the core of the light pipe without further including a non-zero refractive index gradient distribution along the core. It is not apparent that the non-zero density gradient of light-scattering particles alone would increase the uniformity of the side-light emitted, or that it

Art Unit: 2874

would provide any additional advantages over Naum. Moreover, it is not apparent that Naum is sufficiently lacking in the uniformity of side light emission such that one of ordinary skill in the art would have been motivated to alter the construction thereof. Therefore, the claimed invention is patentably distinct from the prior art.

With regard to claims 3-7 and 18-31, as was discussed in earlier Actions, none of the cited prior art discloses or suggests the light-pipe with uniform side-light emission further comprising light-scattering material being distributed in the core of the light pipe, substantially only in a radial swath along the longitudinal axis of the pipe, of substantially less than 360 degrees (or 180 degrees), so that light exits the light pipe from the radial swath. The most relevant prior art, the Naum reference, discloses a light-scattering material distributed throughout the entire core along the longitudinal axis of the light pipe, rather than just a radial swath. The Imamura et al. reference, which is also relevant, discloses a light scattering material distributed in the cladding of a light pipe in a radial swath (about 90 degrees or less) along the longitudinal axis of the fiber. However, there is no suggestion or motivation in these references that a distribution of light-scattering material within a radial swath of substantially less than 360 degrees (or 180 degrees) in the *core* of a light pipe along the longitudinal axis of the pipe would yield uniform side-slit emission. Therefore, the claimed subject matter is allowable over the prior art.

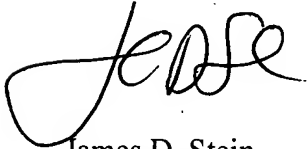
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

Art Unit: 2874

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein  
Patent Examiner, AU 2874



SUNG PAK  
PRIMARY EXAMINER